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DOMESTIC TRANSPORTATION IN THE USSR 1962

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FOREWORD

The significant developments in domestic transportation in the USSR in 1962 are discussed in this publication. Progress in achieving the goals of the Seven Year Plan (1959-65) is also appraised briefly. The information was derived mainly from official publications and announcements, and the specific sources used are available in the files of this Office.

Unless otherwise indicated, ruble values in this publication are given in new rubles established by the Soviet currency reform of 1 January 1961. A nominal rate of exchange based on the gold content of the respective currencies is 0.90 ruble to US \$1.

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DOMESTIC TRANSPORTATION IN THE USSR* 1962

Summary and Conclusions

Soviet domestic transportation in 1962 was faced with the problem of coordinating service among the various modes of transportation. Congestion of transportation equipment waiting to discharge and receive cargo at Soviet ports, border stations, and other transloading points reached such serious proportions in late 1961 and early 1962 that Khrushchev gave it personal attention. Official investigations revealed numerous examples of extreme lack of communication and coordination among the various transportation and foreign trade organs in the handling of foreign trade shipments, which have grown rapidly larger and more complex in recent years. Subsequently, the authority to charter foreign ships was transferred from the Ministry of Foreign Trade to the Ministry of the Maritime Fleet; and a Transport Coordination Commission was created to expedite the exchange of freight between rail and ocean carriers, primarily, but also to coordinate other areas of transportation. Minister of Railroad Transportation, B. P. Beshchev, was appointed chairman of the new commission, thereby assuring the all-important cooperation of the railroads. Increasing foreign trade is also forcing some acceleration of investment in related railroad lines, oil pipelines, tankers, ports, and other transportation facilities and equipment.

Total freight traffic of Soviet transportation in domestic trade in 1962 was 6 percent larger than in 1961. The percentage growth of traffic has been smaller in recent years than in the past, because, as the Soviet economy continues to mature, significant changes are taking place in the support required from the domestic transportation sector by agriculture and industry. Shipments of bulky agricultural products and industrial raw materials are being supplemented by a growing traffic in less weighty but more complex industrial products; and in addition, the change in the fuel balance of the economy from preponderantly coal to coal plus natural gas and petroleum has reduced the amount of transportation needed per unit of output. Thus the growth of almost 6 percent in ton-kilometers** registered annually by Soviet domestic freight transportation during the last 3 years has been adequate for the needs

^{*} The estimates and conclusions in this publication represent the best judgment of this Office as of 1 September 1963.

^{**} Tonnages are given in metric tons throughout this publication.

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of the economy. In contrast, freight transportation growth rates of 8 to 12 percent were required during the 1950's, when it was necessary to haul more bulky products for long distances to more widely dispersed processing centers and when the industrial growth and growth in gross national product were also at a higher rate.

Capital investment in transportation and communications in the first 4 years of the Seven Year Plan (1959-62) amounted to about 60 percent of that intended for the plan period, but investment in the railroads totaled less than 45 percent of planned railroad investment, apparently because plans for new lines, second track, new locomotives, and some other investment programs are not being fulfilled. Nevertheless, considerable progress has been made in the modernization of the railroads, the chief carrier of freight and passengers. In 1962, more than 60 percent of the total traffic handled by the railroads was moved by modern motive power (electric and diesel-electric locomotives) compared with only about one-fourth in 1958. Use of this form of traction in this magnitude, together with the introduction of other modern equipment into the railroad plant, has reduced substantially the cost per unit of traffic.

Railroad revenues exceeded costs by 58 percent in 1962. In spite of the high profit in 1962 and in recent years, the reduction in freight rates was not made effective on 1 January 1963 as planned, apparently because of the difficulty experienced in planning the reduction of railroad freight rates in relation to the rates of other carriers. Probably an equally important consideration in delaying the revision of freight rates was the need to coordinate them with the over-all revision of Soviet prices now planned for 1964. Progress in modernizing the railroad plant was also responsible for a substantial increase in labor productivity (more than 6 percent over 1961), but Soviet productivity still remains only about half that of the US railroad industry.

The development of motor, inland water, and pipeline transport continued to be slow during 1962. Some progress was made in reallocating motor trucks from what is known in the US as private carriage to common-carrier motor transport, but the motor transport industry was plagued by a shortage of trucks and tires. The increase in ton-kilometers experienced by the inland water and domestic maritime transport operators was less than 6 percent, but it was accompanied by an even smaller increase in tons carried. Serious problems with port congestion, poor scheduling, and unusually severe weather and ice conditions all contributed to the inability of these carriers to attract substantial additional traffic or even handle the usual volume of traffic efficiently. Some progress was made, nevertheless, in the acquisition of new vessels. Severe criticism of the slow rate of construction of petroleum pipelines

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was voiced by railroad officials in 1962 because the railroads are experiencing increasing difficulty in absorbing the petroleum traffic originally planned for the pipelines. Less than 30 percent of the petroleum pipelines scheduled to be built during the Seven Year Plan had been completed by the end of 1962. Shortage of pipe is a major factor in the lag in petroleum pipeline construction.

Motor bus transport and civil air transport are increasing their share of the total passenger-kilometers in the USSR, but in 1962 the railroads still accounted for just under two-thirds of this total. Private automobiles carry only an insignificant part of intercity passenger traffic, although in the US they take care of 90 percent of the total. Aeroflot, the Soviet civil air carrier, experienced an increase of 24 percent in passenger traffic during 1962 and expanded its domestic route network by 8 percent during the year. More frequent schedules were instituted on existing air routes. Some 130 new jet and turboprop transports were acquired during the year, and the Soviet air carrier now owns almost as many of these types of aircraft as the US civil airlines. The Soviet high-performance aircraft, however, continue to be much underutilized compared with US practice.

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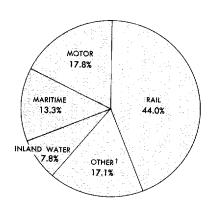
I. Growth and Problems in Coordination of Transportation

A. Traffic

Total freight traffic by all modes of domestic transportation in the USSR in 1962 amounted to 1,986 billion ton-kilometers (tkm), about three-fourths of comparable traffic in the US. This amount represents an increase of 6 percent over 1961 and 30 percent over 1958. Rail traffic accounted for almost 83 percent of the total, water 7.6 percent, motor transport 5.7 percent, petroleum pipelines 3.8 percent, and civil air less than 0.1 percent. The relative importance of rail and water transport in total freight ton-kilometers is diminishing slightly, while that of motor, pipeline, and air transport is increasing. This trend is very gradual, however, as shown in Table 1.* Soviet and US domestic freight traffic are compared in the chart in Figure 1.**

The roles of the various modes of transportation in the transportation of passengers in the USSR are changing somewhat more rapidly. The railroads handled about 64 percent of all public passenger transport in 1962 compared with 66 percent in 1961 and 74 percent in 1958. Public buses and airlines are increasing their share of total traffic (see Table 2***). Passenger-kilometer data for private automobiles in the USSR are not available, but it is clear that the role of that mode of transportation in the USSR is still small. This level of traffic is in sharp contrast to the situation in the US, where the private automobile dominates the field of passenger transportation, handling over 90 percent of all intercity passenger traffic.

B. Capital Investment



Capital investment in transportation in the USSR in 1962 increased about 7 percent over 1961 and is estimated at over 3 billion rubles. Of this amount, about 1.33 billion rubles, or 44 percent, was invested in railroads -- 5.6 percent more than in 1961. The shares of the various carriers in total capital investment in transportation are shown in the accompanying chart. These data were reported in the Soviet journal, Planovoye khozyaystvo, No. 7, July 1963, p. 39, and presumably are for 1962. The share of motor

^{*} Appendix, p. 21, below.

^{**} Following p. 6.

^{***} Appendix, p. 22, below.

t Presumably consisting of civil air transportation (estimated to be 14.1 percent) and oil pipelines (estimated to be 3 percent).

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transport is somewhat understated because it excludes some investment (that obtained from a 2 percent tax on the profits of trucking organizations and used for construction of roads).

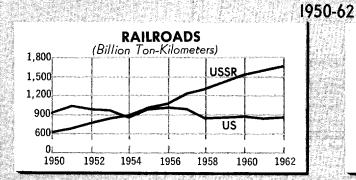
During 1959-62, the first 4 years of the Seven Year Plan, capital investment in transportation and communications totaled 12.6 billion rubles, or about 60 percent of the 20.9 billion to 21.4 billion rubles planned for the whole 7 years. The 4.9 billion rubles of capital investment in railroads during the first 4 years was less than 45 percent of the 11 billion to 11.5 billion rubles planned for rail investment during the entire plan period. Thus rail investment apparently is lagging significantly behind the original plan, presumably because the Seven Year Plan schedules are not being met for construction of new rail lines and second track, production of electric and diesel locomotives, and some additional rail investment programs. Investment in some other modes of transportation has proved to be somewhat greater than anticipated; investment in the maritime tanker fleet, for example, has been especially heavy compared with the original plan.

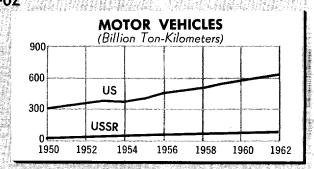
C. Coordination of the Various Modes of Transportation

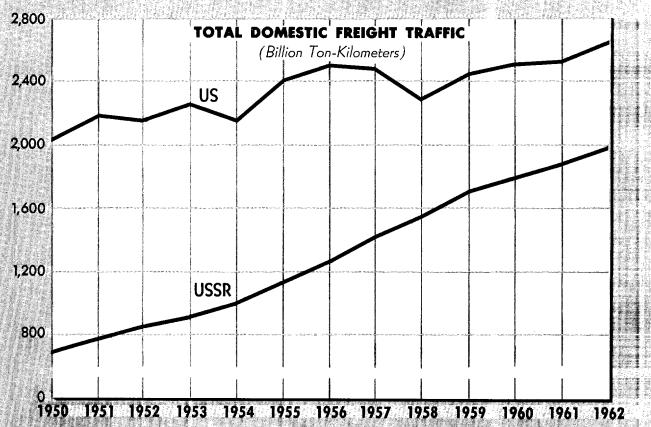
Large accumulations of ships and railroad cars at seaports, a byproduct of a sizable increase in foreign trade, and railroad car congestion at other transloading points in 1961 and early 1962 called the attention of Soviet leaders to a shocking lack of interagency communications and coordination among responsible officials in the Ministry of Railroad Transportation, the Ministry of the Maritime Fleet, and the Ministry of Foreign Trade. Because of this lack of communication, freight was often shipped by rail to ports where there were no ships to load it, while in other cases ships waited in port for long periods before obtaining cargoes. Ships with cargoes to unload were frequently directed by the Ministry of Foreign Trade to inappropriate ports far from the final destination of the freight, thus generating extra rail traffic and adding to transportation costs. In May 1962, Khrushchev announced the formation of a Transport Coordination Commission to improve cooperation among the different modes of transportation. Commission was made subordinate to the Presidium of the Council of Ministers of the USSR, and the Minister of Railroad Transportation, B. P. Beshchev, was appointed Chairman. Corresponding commissions were later set up in republics and economic regions. In explaining the reason for the creation of the new Transportation Coordination Commission, Khrushchev stated that on the average during 1961 there were 15,000 freight cars standing idle on the approaches to ports and border stations in the USSR. He also reported that some Soviet vessels delivering freight to Cuba were not permitted to take on return cargoes there because the Ministry of Foreign Trade had already chartered foreign vessels to carry those cargoes. In order to avoid a repetition Approved For Release 2000/08/29 : CIA-RDP79T01049A002800110001-8

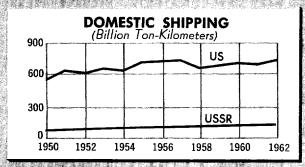
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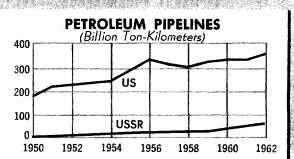
COMPARATIVE DATA ON DOMESTIC FREIGHT TRAFFIC











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of such cases, the function of chartering foreign ships was later transferred to the Ministry of the Maritime Fleet. The freight forwarding functions, however, were retained by the Ministry of Foreign Trade in a reorganized and renamed component called Soyuzvneshtrans, which is responsible for the forwarding functions associated with foreign trade and transit trade shipments by all modes of transportation.

There is still much room for improvement in the coordination of transportation. Coordination in planning new construction for the various modes of transportation is reported by the Soviet press to be poor. For example, construction of the second port at Odessa is said to have been undertaken without considering railroad interests, and its construction is greatly complicating the work of the railroads. Moreover, it is apparently a common occurrence for highways in a region to be planned by a research group without reference to plans being drawn up for railroads by another organization. It is reported also that some petroleum pipelines are being planned without taking into account the planned future development of parallel waterways.

The new emphasis on coordination of the various modes of transportation is probably at least partly responsible for a decision to postpone until 1964 the revision of railroad freight rates that had been scheduled to take effect on 1 January 1963. Complaints have been made about lack of coordination in drawing up rate schedules for the various modes of transportation. Coordination with the over-all revision of Soviet prices, which has also been postponed until 1964, was probably an equally important consideration in delaying revision of freight rates.

II. Railroad Transportation

Rail freight traffic in the USSR in 1962 was 5 percent greater than in 1961 and totaled 1,646 billion tkm, almost 85 percent more than rail traffic in the US and (according to Soviet calculations) almost half of world rail traffic. Soviet rail traffic is increasing slightly faster than anticipated by the original Seven Year Plan, which anticipated an increase of 22.7 percent during 1959-62 compared with the actual growth of 26.5 percent.

The growth of rail traffic has been slower in recent years than in the past, mainly due to the changing fuel balance and the fact that, as the Soviet economy continues to mature, shipments of bulky agricultural products and industrial raw materials are being supplemented by a growing traffic in less weighty but more complex industrial products. Because of the increased use of petroleum and natural gas, the volume of coal traffic on the railroads has varied little in recent years. The percentage share of coal traffic in total

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rail traffic is expected to be less than 20 percent in 1963 in contrast to 26 percent in 1958. A diminishing average length of haul for coal has also been a contributing factor.

Petroleum traffic on the railroads meanwhile has been increasing much faster than anticipated by the Seven Year Plan, and in 1962 it exceeded the volume originally forecast for 1965. This increase has posed a considerable problem for the railroads because tank cars are in short supply and petroleum storage facilities are limited. Railroad officials have recently been complaining vociferously about the lagging development of petroleum pipelines, which in 1962 carried 12 percent less traffic than originally envisaged in the Seven Year Plan. The railroads are carrying 3.4 times as many ton-kilometers of petroleum traffic as the pipelines, and the 252 billion thm of petroleum traffic on the railroads accounted for 15.3 percent of total rail traffic. Almost half of this rail petroleum traffic could (and presumably should) be carried by pipelines at lower costs. Most of the rest of the traffic in railroad tank cars consists of products too viscous for pipeline transport.

Passenger traffic on the railroads in 1962 totaled 189.3 billion passenger-kilometers (pkm) in 1962, 7 percent more than in 1961, and almost reached the figure planned for 1965. Other data on freight and passenger traffic are presented in Tables 1 and 2.* Some long-distance travel was lost to the expanding services of Aeroflot and short to medium-distance travel to buses. Railroads, however, still accounted for almost two-thirds of total passenger-kilometers.

About 53 percent of the 9,000 km of new railroad lines planned for completion during 1959-65 had been commissioned by the end of 1962 (see Table 3**), but the total reported by official statistics has been inflated by including transfers of newly constructed logging railroads to the Ministry of Railroad Transportation and possibly by including lines which did not meet standards usually required by the Ministry for acceptance for permanent operation. The plan calls for new logging railroads amounting to 2,700 km in addition to the 9,000 km mentioned above. The only specific lines reported to have been commissioned for permanent operation in 1962 are listed in Table 4*** and total 531 km. Lines under construction during 1963 are planned to total more than 4,500 km, according to Soviet authorities, but only 425 km are expected to be ready for permanent operation in 1963. (For specific lines, see Table 5.t) A new rail route was, in effect, created in November 1962 by the initiation of rail ferry operations across the Caspian Sea between Baku and Krasnovodsk, a distance of about 343 km, the world's

^{*} Appendix, pp. 21 and 22, respectively, below.

^{**} Appendix, p. 23, below.

^{***} Appendix, p. 25, below.

t Appendix, p. 26, below.

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longest rail ferry crossing. This service is cutting costs and travel time for freight that would otherwise have to take a long, roundabout rail route or else undergo costly and time-consuming transshipment operations to and from water transport at Krasnovodsk and Baku. As of 4 January 1963, the first ferry, the diesel ship Sovetskiy Azerbaydzhan, had made 38 trips on the Caspian and had transported over 100,000 tons of cargo. Regular passenger service on the ferry commenced on this date. The Sovetskiy Azerbaydzhan is designed to carry thirty 50-ton, four-axle freight cars plus 300 passengers; it is 134 meters long and 18 meters wide and is the height of a 7-story building. A second ferry is now under construction, and by the end of 1965 there are supposed to be five in operation on the Baku-Krasnovodsk run. By 1970, there is to be an additional ferry route between Krasnovodsk and Makhachkala, north of Baku.

Investment in electrification and dieselization of rail traction continued to be heavy in 1962, in line with the policy outlined in the Seven Year Plan. During those 7 years, 11.0 billion to 11.5 billion rubles are to be invested in the railroads, of which about 3.6 billion rubles, or almost one-third, are to be invested in new electric and diesel locomotives and electric and diesel rail cars, and 12 percent (1.5 billion to 1.6 billion rubles) is to be spent for electrification apart from rolling stock, plus some additional outlays for dieselization. Electric and diesel traction are being introduced on the most heavily traveled rail lines in the USSR in order to accelerate train speeds and increase the traffic capacity of these lines as well as to reduce unit operating costs (see the map, Figure 2*). During 1959-62, 2.9 billion rubles in operating costs were saved by the introduction of electric and diesel traction. Electrified lines commissioned in 1962 are listed in Table 6** and plans for 1963 in Table 7.*** The length of route converted to diesel traction is apparently far behind the original Seven Year Plan schedule. About 21,800 km were converted to diesel traction during 1959-62, and 7,000 km in addition are planned for conversion in 1963, leaving 30,100 km to be converted in 1964-65 in order to fulfill the Seven Year Plan goal of 58,900 km.

In spite of this underfulfillment of plans for length of route converted to diesel traction and some problems in the production of new locomotives, the share of traffic moved by electric and diesel traction is still close to the original Seven Year Plan goal because electric and diesel locomotives are being utilized more intensively than originally anticipated. In 1962, electric and diesel locomotives moved 62 percent of all rail traffic compared with only 26 percent in 1958.

^{*} Inside back cover.

^{**} Appendix, p. 29, below.

^{***} Appendix, p. 30, below.

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This amount is planned to increase to 71 percent in 1963 and to 85 to 87 percent in 1965. Steam traction is to be virtually eliminated in 1967.

The modernization program in Soviet motive power continued to place primary emphasis in 1962 on the acquisition of high-powered electric and diesel locomotives (see Table 3*). Progress on the development of locomotive types of new design was so poor, however, that the Minister of Railroad Transportation himself complained about the timelag from design to mass production. In spite of supplementary imports of electric locomotives from Czechoslovakia and West Germany, the acquisition of electric locomotives by Soviet railroads is still running behind the installation of the overhead wire lines for electrified railroads, with the result that some diesel and steam locomotives are temporarily operating under wires of electrified stretches. Alternating current (AC) locomotives especially continue to be in short supply, although these locomotives were said to constitute more than half of the new electric locomotives received by the railroads in 1962. The TE-3 diesel locomotive with 2,000 horsepower (hp) in each unit was almost the only model of diesel freight locomotive received by Soviet railroads during 1962. This locomotive was in its seventh year of serial production and was to have been phased out of production some time ago.

A shortage of diesel fuel has been publicly acknowledged by Soviet officials, and a campaign has been launched to conserve it. Soviet sources say that they expect this shortage to continue during 1963. Conservation of diesel fuel by the railroads is deemed to be especially important because diesel locomotives consume such a large amount of high-quality diesel fuel (3.3 million tons in 1962, which is about 12 percent of total Soviet production of diesel fuel). Soviet diesel locomotives still use little sulfurous diesel fuel because of a lack of satisfactory additives to offset the corrosive effects of the sulfur. The limited availability of good-quality diesel fuel has caused the USSR to have a strong interest in the development of the gas turbine locomotive, which can operate on fuel of low quality. Two gas turbine locomotives began operational testing at the end of the year.

The freight car inventory of the USSR continued to expand during 1962 (see Table 3*), but, in an increasing traffic situation, continued to be intensively utilized. Tank cars, particularly, seemed to be barely adequate to meet the demand. Most of the new acquisitions were standard four-axle types of 50 to 62-ton capacity, although a few hundred heavy-duty cars with six axles or more were also placed into service. Roller bearings were installed on about 25 percent of new production during 1962, but all roller bearing cars in the inventory

^{*} Appendix, p. 23, below.

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still represent less than 5 percent of the total. There is still no evidence of any application of long-travel draft gear or cushioned underframes, which have been acquired in increasing numbers by US railroads in recent years in order to reduce shock and damage to lading.

Only about 17 percent of all freight cars in the USSR are now the obsolete two-axle types. Average capacity is about 47 tons per car compared with a US average of about 51 tons per car for an inventory of nearly twice as many freight cars, including many specialized types which do not exist in the USSR. The first train (30 cars) with automatic gauge-changing wheel sets to be manufactured in the USSR was produced at Bryansk in 1962 and is undergoing operational testing between the USSR and the European Satellites. Several of these trains produced in East Germany are also in operational testing. Limited production and use are expected for some time to come.

The acquisition of additional electric and diesel locomotives and other modern equipment and the retirement of less efficient equipment resulted in increased operating efficiency, increased profits, and reduced cost per unit of traffic. Revenues were said to have exceeded costs by 58 percent in 1962. Freight rate reductions designed to cut these huge profits have now been postponed from the original effective date of 1 January 1963 until 1964, coinciding with a general price revision in the Soviet economy.

The cost of railroad shipments per unit of traffic decreased from 3.088 kopeks per 10 traffic-km in 1961 to 3.033 kopeks in 1962. The reduction was less than planned because passenger traffic, which is much higher in cost than freight traffic, was larger than anticipated. Labor productivity in 1962 was said to have been 6.4 percent higher than in 1961 and 27.1 percent higher than in 1958; the Seven Year Plan originally anticipated an increase of only 15.5 percent during the 4-year period. Output per operating employee in 1962 totaled 914,900 traffic-km, and the increased traffic in 1962 was handled with 21,800 fewer employees than in 1961.

III. Ancillary Forms of Transportation

A. Motor

Freight traffic by motor vehicles in the USSR during 1962 continued to increase at a decreasing rate. The volume of traffic by motor transport and the percent of total domestic traffic in the USSR are shown in Table 1.* The rate of growth, 1962 over 1961, slowed down to 6.9 percent, having declined steadily from a high of

^{*} Appendix, p. 21, below.

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27.2 percent in 1957 over 1956. The absolute increase in ton-kilometers was virtually the same as for 1961 over 1960 and was substantially less than in several previous years. There was no significant increase in long-haul trucking. Soviet intercity trucking continued to represent less than 1 percent of comparable traffic in the US. Centralized motor transport, or what corresponds roughly to common carrier trucking operations in the US, continued to grow more rapidly than motor transport as a whole. Small motor pools corresponding to what is known as private trucking operations in the US continued to be consolidated with centralized trucking organizations. The centralized or common carrier share of total ton-kilometers moved by motor transport increased to about 28 percent in 1962.

Exports and replacement requirements are believed to have held the net increase in the number of motor vehicles in the USSR during 1962 to less than 3 percent of the estimated inventory at the end of 1961, in spite of the production of some 578,000 new vehicles. The inventory at the end of 1962 is estimated at about 4,772,000 vehicles, of which some 3,760,000 are estimated to have been trucks and jeeps,* 105,000 buses, and 907,000 passenger automobiles. Some 15 percent of these vehicles are believed to be assigned to the military services. presents an estimate of the civilian truck inventory. Lack of an adequate highway network continues to inhibit rapid development of intercity motor transport in the USSR. The highway network of the USSR during 1962 is estimated to have increased by only 20,000 km of surfaced roads (10,000 km of paved roads***). The Soviet network of paved roads (about 97,000 km) is less than 4 percent of the length of comparable roads in the US, while surfaced roads (about 310,000 km) total less than 7 percent of the mileage of roughly comparable roads in the The US is currently investing each year about 24 times the estimated half-billion dollars (half-billion new rublest) being invested by the USSR in highways.

A serious shortage of tires was the most important single impediment to efficient operation of the available motor vehicles in the USSR, beyond the general shortage of suitable vehicles and the inadequacies of the highway network. Many published admissions during 1961-62 of the seriousness of the situation, including statements about thousands of vehicles standing idle for lack of tires, culminated in

^{*} Soviet production data combine trucks and jeeps.

^{**} Appendix, p. 23, below.

^{***} A paved road has a surface of either portland cement, concrete, or some type of asphalt. Surfaced roads include, in addition, unpaved roads that have been graded with a material facilitating drainage and also have been stablilized in most cases.

[†] Based on an estimated ruble/dollar ratio for highway construction of one to one.

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public declarations at the Party Congress in November 1962 of intentions to divert resources to tire manufacture and repair as well as to research on the production of better quality tires. Some progress toward alleviating the shortage has already been claimed in 1963, but a Soviet article on 4 May admitted that the Soviet economy was short about 2 million tires, as a result of which many trucks were idle. Other less serious but nevertheless important shortages were noted in diesel fuel and in spare parts. Repair problems continue to be complicated by impractical organizational restrictions and general inadequacy of facilities. The factors enumerated above and others, including the poor quality of Soviet roads and the low horsepower-to-weight ratio that is characteristic of Soviet vehicles, continue to cause motor transport to be a low-efficiency, high-cost operation.

B. Domestic Water

Domestic freight traffic by water in the USSR during 1962 experienced only moderate increases and diminishing rates of growth as shown in Table 1.* Total tons carried by inland and coastal traffic showed only a 2.3-percent increase over 1961, but a greater volume of long hauls between the Black Sea and the Far East (and to some extent on the Volga and certain Siberian rivers and on the Northern Sea Route) caused the increase in ton-kilometers to register 5.5 percent. The Soviet authorities claimed a 5-percent increase in traffic to about 1.8 million tons on the Northern Sea Route in spite of unusually severe weather. Tons carried on the Soviet inland waterways and on coastal and intercoastal trade routes amounted to about 41 percent of comparable US traffic, which reached an all-time high of 692 million tons in 1962.

The development of inland waterways and ports continued at a relatively slow pace during 1962. A few thousand additional kilometers of inland waterways were opened for regular shipping, bringing the total utilized to about 140,000 of a total of about 500,000 km considered to be potentially navigable in the USSR. Construction continued during 1962 on the major Volga-Baltic waterway project, but no new locks were opened. The Soviet authorities are forecasting completion of this waterway during 1964, but the present rate of progress indicates 1965 or even later to be more likely. Port development received increasing emphasis during 1962. Considerable construction and reconstruction of piers and loading and unloading facilities was carried out at numerous ports. Investment in waterways and ports is planned to increase during 1963. More modern piers are planned for completion, and 1,200 additional km of waterways are to be utilized for regular shipping. The new routes are said to be planned mostly on small rivers in Siberia.

^{*} Appendix, p. 21, below.

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Deliveries to the river fleet in 1962 included a substantial number of diesel tankers and dry cargo vessels as well as modern passenger vessels of both conventional and hydrofoil types. The tankers delivered included a number in the 600 to 3,300-ton capacity range and the first of a new series with cargo-carrying capacities of 5,000 tons. Dry cargo vessel deliveries included a large number of the standard Shestaya Pyatiletka class with cargo-carrying capacities of 2,000 tons as well as additional Volgadon-class giants with 5,000-ton capacities and the first of a new series of motor ships with 2,000ton capacities intended for mixed river-sea service carrying pulpwood from the White Sea area to Baltic ports via the White Sea - Onega waterway. During 1962 the USSR continued deliveries of pusher tugs and dry cargo barges to the river fleet. Deliveries included the first Soviet integrated tow -- that is, a pusher tug and barges designed to function as a single unit. These tows will carry close to 9,000 tons, considerably less than their US counterparts.

The hydrofoil fleet of the USSR is the largest in the world. At the end of 1962 it included more than 80 vessels capable of carrying 30 or more passengers. Seventy of these were 66-passenger river vessels of the Raketa class with maximum speeds of 80 km per hour.

Soviet water transport continued to operate at low levels of efficiency. Traffic capacity of a key waterway like the Volga-Don Canal, for example, was said to be less than 50 percent used. Targets for the increase of labor productivity and for decreasing costs remained unattainable. All steamship companies except the Volga United lost money on passenger business. Serious problems with port congestion, poor scheduling, and unusually severe weather and ice conditions all contributed to a lack of ability to attract substantial additional traffic or even to handle efficiently the usual traffic. Planned increases in labor productivity and decreases in costs for 1963 at about the levels experienced during 1955-61 indicate that the USSR hopes to recover from setbacks encountered in water transport during 1962.

C. Petroleum Pipeline

Petroleum traffic on pipelines in the USSR during 1962 was about 21 percent of the corresponding figure for the US. Petroleum traffic on main-line pipelines in the USSR in 1962 (see Table 1*) was said to have been a 4-percent overfulfillment of the plan for 1962 but 12 percent short of the original goal set for 1962 by the Seven Year Plan. Furthermore, the State Planning Commission is said to have reduced the original Seven Year Plan assignments for 1963-65 by 73 billion tkm.

^{*} Appendix, p. 21, below.

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The main reason for underfulfillment of Seven Year Plan goals for the transportation of petroleum by pipeline is lagging construction of petroleum pipelines. Of the total 28,600 km of petroleum pipeline scheduled to be built during 1959-65, about 8,200 km, or 29 percent, were commissioned during the first 4 years, of which about 2,100 km are estimated to have been commissioned in 1962. The 1963 plan calls for commissioning of 2,500 km* in addition. In order to achieve the original Seven Year Plan goal, 17,900 km would have to be built during 1964-65, but hope of achieving this goal has been abandoned, and a recent Soviet press article complained that even the new reduced 1965 goal may not be achieved.

A poster at a recent Moscow exhibit showed the revised 1959-65 goal to be only 21,300 km for petroleum pipelines, while the 1959-65 goal for gas pipelines was increased by 5,600 km, to 31,600 km. Petroleum pipeline construction projects compete for materials and labor with gas pipelines, which have tended to receive priority. The gas pipeline program is running ahead of schedule (16,400 km built during 1959-62 compared with the planned 14,300 km).

Supplies of pipe for petroleum and gas pipelines have been scarce in the USSR for many years, and Soviet officials have acknowledged that this shortage will also apply in 1963. The shortage of largediameter pipe is particularly critical. The Friendship crude oil pipeline to the European Satellites and the Bukhara-Ural gas pipeline, which also requires large-diameter pipe, were both originally scheduled for completion in 1963, but there evidently will not be sufficient pipe available in time to meet this schedule, because the target date for completion of the Friendship pipeline has now been postponed to the third quarter of 1964. The USSR has been importing some large-diameter pipe from non-Bloc countries and had planned to increase these imports, but instead the imports are now being reduced following a NATO recommendation that member nations refrain from exporting large-diameter pipe to the USSR. The USSR is now trying to induce individual exporters and their governments to ignore the recommended "embargo" and simultaneously is giving increased priority to expansion of Soviet capacity to produce 40-inch pipe. Soviet imports of 40-inch pipe and current contracts with non-Bloc countries amount to about 40 percent of estimated Soviet requirements for 40-inch pipe during the Seven Year Plan.

D. Civil Air

During 1962, civil aviation in the USSR continued to expand rapidly with a substantial increase in the number of cities served,

^{*} Other sources say "over 3,000."

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frequencies of flights, and passengers carried. This achievement was realized by reducing fares to the extent necessary to divert some of the medium and long-distance passenger traffic from the railroads to the airlines and by offering more and better service. The availability of flights and routes for the transportation of high-priority personnel and cargo to remote areas was increased as well as the speed of delivery of high-value, low-bulk materials to bolster lagging supply lines in various strategic points in the USSR. In all, the domestic routes were expanded by 8 percent or 30,000 km during the year. International routes were also expanded by approximately the same number of kilometers, amounting to an increase of 60 percent. Aeroflot experienced an absolute gain of 3.9 billion pkm (see Table 2*), or about 24 percent compared with a US increase of 6.5 billion or slightly over 10 percent, and a total airline passenger growth for the countries who are members of the International Civil Aviation Organization of 12 percent. Achievement of the Soviet passenger-kilometer plan for 1965, however, will require an average annual increase of more than 30 percent for the remaining years of the plan period.

The An-24 (Coke) turboprop transport was introduced to regular civil air service and its production was begun on a serial basis during 1962. At the same time, production apparently was phased out on the An-10 (Cat). The USSR started test-flying the new long-range turbofan, the II-62, and continued development work on a supersonic transport. A modified long-distance II-18 (Coot), the II-18-I, may be in serial production. Soviet authorities have recently been silent on the status of the Tu-124A and the An-10B. It is not known at this time whether plans for the development for these transports have been abandoned. Helicopters and helicopter routes received attention during the year, but the large Mi-6 (Hook), with a carrying capacity of 60 to 70 passengers, did not appear in scheduled service.

About 65 percent of the passenger traffic of Aeroflot was carried by high-performance aircraft. The Tu-104 and II-18 provided the greatest amount of service in 1962; however, the use of the Tu-104 began to decline slightly, and II-18 service showed a moderate increase. The use of the Tu-104 should continue to decrease in the next few years, as even by Soviet standards these aircraft are beginning to become obsolete. The quantity of II-18's on hand continued to rise, as production remained steady and few were exported. Active utilization of the Tu-114 was expanded on routes where its range capabilities were exploitable. Although no accidents were reported, several emergency stops were experienced and much time was required for maintenance. In all, only 8 of these large aircraft were produced, and indications were that in due course it would be succeeded by the II-62 turbofan or by a supersonic type. The inventory of Soviet civil airliners reached a total of about

^{*} Appendix, p. 22, below.

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1,940 as of 1 January 1963, of which about 600 were high-performance (jet and turboprop) aircraft (see Table 3*). US civil airlines, by comparison, owned about 1,980 airliners, of which an estimated 681 were high-performance aircraft. During 1962 the inventory of high-performance transport aircraft assigned to Aeroflot increased by about 130 units, while high-performance types in the ownership of US scheduled lines increased by 105 aircraft.

The utilization rate per high-performance transport in the inventory is estimated to be about half as much as in the US. The low flying time per aircraft makes it possible to maintain a substantial volume of reserve capacity in the inventory of civil aircraft that is potentially available for military use, but it also reflects a strong provincial attitude in the various territorial administrations of Aeroflot in refusing to come to agreements on sharing aircraft or on the use of aircraft by more than one flight crew. There was a gradual general reduction in charges for civil air service of about 10 to 15 percent, but the subsequent demand for air transportation was still not high enought to provide the traffic called for in the annual plan. Although there was a general increase in the service offered in 1962 compared with 1961, there was also an increase in the number of delays and flight cancellations because of poor flying weather and because of Aeroflot's desire to maintain high load factors. The number of known crashes experienced by Soviet high-performance transport aircraft was high for 1962 compared with known crashes in previous years. Soviet maintenance and operating standards are believed to be inferior to the norms established by the International Civil Aviation Organization. An increase in the quality of service and safety of operation as well as further cost reductions will be needed to stimulate the demand for air transportation to the planned level for 1963 and 1965.

^{*} Appendix, p. 23, below.

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APPENDIX

STATISTICAL TABLES

Table l

Domestic Freight Traffic in the USSR, by Mode of Transportation 1958, 1961-62, 1963 Plan, and Original 1965 Plan

Mode of Transportation	1958	1961	1962	1963 Plan	Original 1965 Plan	1958	1961	1962	1963 Plan	Origina 1965 Pl
200		Billio	n Metric To	on Metric Ton-Kilometers	ŭ		Percent o	of Total	Ton-Kilometers	ers
Mailroad Sotor vehicle Tetroleum pipeline Mivil air Inland water	1,302.0 76.8 33.8 0.40 85.5	1,566.6 105.7 60.0 0.80 106.0 37.8	1,646.3 113.0 74.5 0.89 109.8 41.9	1,682 123.5 88 1 115.4	1,800 to 1,850 146 185 <u>b</u> / 2 140 50	48.00.00 9.00.00 9.00.00 9.00.00	83.50.00.00.00.00.00.00.00.00.00.00.00.00.	82.9 5.7 3.8 0.045 5.5	88.0 6.0 7.6 7.6 8.0	
ON Total	1,533.5	1,876.9	1,986.4	2,050	2,323 to 2,373	100.0	100.0	100.0	100.0	100.0
)P7		Million	Metric Tons Carried	s Carried			Percent	of Total	Tons Carried	ed
dailroad Lotor vehicle etroleum pipeline kivil air Anland water Comestic maritime	1,616.9 6,474.4 94.9 0.45 178.3 52.4	1,987.6 8,922.6 144.0 0.84 223.9 54.4	2,077.4 9,450.0 165.2 1 230.0 54.7	N.A. 10,000+ 183 N.A. N.A.	2,372 12,300 240 1.8 261 65	19.2 76.9 1.1 Negl. 2.1	17.5 78.7 1.3 Negl. 2.0	17.3 78.9 1.4 1.9 1.9	N. A. N. A. N. A. N. A. N. A.	15.6 80.7 1.6 Neg1. 1.7 0.4
008 Total	8,417.3	11,333.3	11,978.3	N.A.	15,240	100.0	100.0	100.0	N.A.	100.0
D. Percentages are based on 1,825 billion tkm for railroads Q. 348 billion tkm. G. A new lower goal has been set, probably 160 billion tkm. Indicate the standard of the stand	e based on al has been 1963-65.	1,825 billi set, proba	on tkm for bly 160 bil	\sim	(the midpoint of the range) and A total of 73 billion thm was	the range	and a was sai	orrespond to have	corresponding total of d to have been cut from the	of rom the

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Table 2

Passenger Traffic in the USSR, by Mode of Transportation a/2 1958, 1961-62, 1963 Plan, and Original 1965 Plan

ed For	p J Mode of OTransportation	1958	1961	1962	1963 Plan	Original 1965 Plan	1958	1961	1962	Original 1965 Plan
Relea			Billio	on Passenger-Kilometers	-Kilomet	s.re	of To	Pe Total Pass	Percent ssenger-Ki	Percent Passenger-Kilometers
se 2000/08/	• Bailroad • Railroad • Clublic bus • Clivil air • Clinland water	158.4 42.6 6.4 4.0	176.3 69.3 16.4 4.4	189.3 81.5 20.3 4.6	190 95.9 28.5 4.8 N.A.	190 150 45 5	74.4 20.0 3.0 1.9	65.9 25.9 6.1 1.6	63.7 27.5 6.8 1.6	48.4 38.3 11.5 0.5
29 : 0	Total	212.8	267.7	297.0	N.A.	392	100.0	100.0	100.0	100.0
CIA-R			Milli	ion Passengers	ers Carried	ed	Of 1	Per Total Pas	Percent Passengers	Carried
	AGRailroad Lebblic bus Civil air Inland water Maritime	1,834 8,377 102 12	1,962 11,829 22 130 16	2,037 13,410 27 131 18	N. A. N. A. 35 N. A. N. A.	2,250 22,000 to 24,000 55 to 60 140 23	17.7 81.1 0.1 1.0	14.1 84.7 0.8 0.9	13.0 85.9 0.8 0.8	0000 0000 0000 0000 0000 0000 0000 0000 0000
A002	Total	10,333	13,959	15,623	N.A.	24,468 to 26,473	100.0	100.0	100.0	100.0
ة 280	. Civil air	Civil air and maritime traffic include international	traffic in	clude inter	national	service, which is	an insign	an insignificant part	part of	the total.

passengers (the midpoints of

Approv

Major Programs for Investment in Domestic Transportation in the USSR 1959-65

Table 3

				Produced	Produced or Completed	ū		Estima	Estimated Total	at End of Year a/
Mode of Transportation	Unit of Measure	1959	1960	1961	1962	1963 Plan	1959-65 Plan	1958	1962	1965
Railroads										
Freight cars Tank cars	Units Units	38,600 9,500 <u>b</u> /	36,400 10,100 b/	35,000 10,700 b/	35,700 11,400 b/	N.A. N.A.	340,000 80,000 <u>b</u> /	903,800 98,000	980,000 118,000	1,015,000 140,000
Mainline locomotives (all types)	Units							36,000	29,000	31,700
Electric Diesel	Units Units	435 1,002	396	557 1,455	617 1 , 483	1,600	5,400	2,000	4,400	8,100 14,300
Railroad routes	Kilometers	1,186	1,455	957	1,185 b/	425	/5 000 °C	122,800	128,000	131,800
Double track Electrified Dieselized Automatic block sig-	Kilometers Kilometers Kilometers	686 2,087 3,200	545 2,255 3,400	508 1,861 8,674	584 2,297 6,500	516 2,174 7,000	8,000 17,600 58,900	33,700 9,472 11,100	36,000 17,972 32,900	41,700 a/ 27,100 a/ 70,000 a/
naling and central- ized traffic control	Kilometers	1,521	1,790	1,480	2,146	2,235	18,000 to 20,000	22,700	29,600	29,600 40,700 to 42,700 $\frac{a}{4}$
Highways										
Civilian trucks	Thousand	((0	7		C	0	c c	6
Surfaced roads Paved roads	Wilometers Kilometers	304.3 15,100 8,100	314.3 19,800 10,500	320.0 19,100 10,000	340 20,000 b/ 10,000 b/	N.A. N.A.	2,051 <u>e/</u> N.A.	235,900 58,500	3,000 310,000 97,100	3,350 370,000 130,000
Inland waterways in commercial navigation	Kilometers	2,900	1,900	1,500	1,600	1,200	7,500	133,100	140,000	140,600
* Footnotes follow on p. 24.	, 24·									

Table 3

Major Programs for Investment in Domestic Transportation in the USSR 1959-65

(Continued)

nd of Year a/	1965	43,000 d/		N.A.	800 to 900	N.A.	N.A.	N.A.
Estimated Total at End of Year 2/	1962	25,600		4,430	98	1,340	2,490	480,000
Estimat	1958	14,400		3,515	115	1,550	1,850	365,000
	1959-65 Plan	28,600		N.A.	700 to 800 b/	N.A.	N.A.	N.A.
	1963 Plan	2,500		N.A.	N. A.	N.A.	N.A.	N.A.
Produced or Completed	1962	2,100 b/ 2,500		N.A.	130	N.A.	N.A.	000,09
	1961	3,200		N.A.	120	N.A.	N.A.	45,000
	1960	009		N.A.	8	N. A.	N.A.	5,000
	1959	2,300		N.A.	165	N.A.	N.A.	2,000
1	Unit of Measure	Kilometers		Units	Units	Units	Units	Kilometers
	Mode of Transportation	Petroleum pipelines	Civil aviation	Civil aircraft	Jet and turboprop	airliners	ngne ancrare and helicopters	Civil air routes ${ ilde {f f}}/$

a. Taking into account estimated imports, retirements, and transfers from or to nontransport organizations. Net totals shown are, therefore, facilities and equipment in general transportation service.

c. In addition, 2,700 km of logging railroads are planned for completion. Some rail lines planned originally only as logging railroads are included in 1959-62 totals.

d. Plan. Progress to date indicates probable underfulfillment.

e. The announced goal was 70,000 km, but this apparently does not include all surfaced roads.

f. Including domestic trunk and territorial routes and international routes.

Table 4

Major Additions to the Permanent Railroad Network of the Ministry of Railroad Transportation in the USSR 1962

Railroad Line	Location	Length (Kilometers)	Remarks
Kamen'-Altayskaya	West Siberia	202 a/	last remaining section of the cutoff built from Kulomzino, west of Omsk; to the South Siberian Railroad at Altayskaya in order to relieve the heavily burdened section of the Trans-Siberian Railroad between Omsk and Novosibirsk, where freight density is said to be eight times the national average and heavier than anywhere else in the world. The freight will consist mainly of coal moving from the Kuznetsk Coal Basin to the northern Urals; metal and grain will also be important.
Mikun'-Syktyvkar	Komi ASSR	96	To exploit timber resources.
Dubovo-Dobropol'ye	Ukraine	29	To serve new coal mines in the Donets Basin.
Syr-Dar'ya - Dzhizak	Uzbek SSR	110	Bypasses the Ursat'yevskaya junction and serves new cotton-growing areas; it is now carrying construction freight to the Syr-Dar'ya River where a hydro- electric powerplant is under construc- tion.
Kamenets-Podol'skiy - Larga	Ukraine and Moldavia	56	Improves transportation to Rumania.

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a. Of which 32 km may have been commissioned in 1961.

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Table 5

Railroad Lines Planned to Be Under Construction in the USSR During 1963

Remarks	Completion in 1963 is planned. This line is part of the Central Siberian Railroad.	Completion in 1963 is planned. Grain, sugar beets, and animal products will move over this line from western and central Krasnodarskiy Kray to the port of Novorossiysk, bypassing the heavily traveled Rostov-Tikhoretskaya line.	This bypass line around Rostov was supposed to have been completed and electrified in 1962, but work was not completed. Presumably it will be finished in 1963.	Completion in 1963 is planned. The line, which serves cobalt and nickel deposits, has been in temporary operation since November 1960.	This is the easternmost end of the South Siberian Railroad and is the most important line now under construction. It will relieve the main Trans-Siberian Railroad of heavy timber and lumber shipments to central Asia and the Kuznetsk Coal Basin. The original 1963 date for commissioning will not be achieved, since it is now planned that the last of the nine tunnels on the line will be completed in December 1963. In 1962, treins ran from Abakan to Koshurnikovo, 179 km, and in 1963 they are expected to reach the 250-km mark. The line is simultaneously being electrified.
Length (Kilometers)	06	85	[2]	70	945
Location	Kazakh SSR	Rostovskaya Oblast and Krasnodarskiy Kray	Rostovskaya Oblast	Orenburgskaya Oblast, Urals	Krasnoyarskiy Kray, East Siberia
Railroad Line	Volodarskoye-Peski	Bataysk-Starominskaya	Kiziterinka-Bataysk	Profintern-Buryktal	Abakan-Tayshet

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Table 5

Railroad Lines Planned to Be Under Construction in the USSR During 1963 (Continued)

Remarks	To exploit timber resources. As of January 1963, trains ran to Maklakovo on the Yenisey, where woodprocessing installations are to be built. In the future the line will assist the construction of hydroelectric powerplants on the Yenisey and Angara Rivers and subsequently will be extended to the Lower Angara Iron Ore Basin.	To exploit timber resources. Later it will be an approach to the construction site of the Boguchany Hydroelectric Powerplant. Commissioning in 1965 is planned. The line is in use while under construction.	This line from Shush' (west of Krasnaya Sopka) to the Kiya-Shaltyr' nepheline deposits will provide raw material for the Krasnoyarsk Aluminum Plant.	This line will serve the new West Siberian Metallurgical Plant, now under construction, and coal deposits and will bypass the Novokuznetsk junction.	To exploit timber resources.	This line, which is being built primarily to exploit timber resources, will also help to develop new gas and oil deposits. Commissioning in 1964 is planned. Considerable timber is already moving over the line.
Length (Kilometers)	276	306	100	138	500	380
Location	Krasnoyarskiy Kray, East Siberia	Krasnoyarskiy Kray, East Siberia	Krasnoyarskiy Kray, East Siberia	West Siberia	West Siberia	Urals and West Siberia
Railroad Line	Achinsk-Abalakovo	Reshoty-Boguchany	Shush' - Kiya-Shaltyr'	Podobas-Artyshta	Asino - Belyy Yar	Ivdel'-Ob'

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S-E-C-R-E-T

Railroad Lines Planned to Be Under Construction in the USSR During 1963 (Continued) Table 5

Remarks	To exploit timber resources.	This railroad to an iron ore deposit at Karagayly is supposed to be extended later to Aktogay to form part of the new rail line being built across Kazakhstan and western China.	Part of the Central Siberian Railroad.	To exploit timber resources.	To exploit timber resources.	To exploit timber resources.		
	To exp]	This re suppose of the	Part of	To exp]	To exp]	To exp.		
Length (Kilometers)	186	285	172	200	189	235		
Location	Urals	Kazakh SSR	Kazakh SSR	Arkhangelskaya Oblast	Karelo-Finnish SSR	Komi ASSR		
Railroad Line	Tavda-Sotnik	Karaganda-Karagayly	Irtyshskoye - Kzyl-Tu	Arkhangel'sk-Karpogary	Sukozero-Yushkozero	Mikun'-Koslan		

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Table 6

Electrified Railroad Lines Commissioned in the USSR 1962

Railroad Line	Length (Kilometers)	Type of Current
Vladivostok-Nadezhdinskaya	47	AC
Gor'kiy-Shakhun'ya	25 0	AC
Rostov-Kavkazskaya	241	AC
Kavkazskaya-Nevinnomysskaya	146	\mathbf{AC}
Armavir-Belorechenskaya	112	AC
Rostov-Likhaya	169	AC
Pyatikhatki-Mironovka	311	AC
Kiziterinka-Bataysk a/	21	AC
Sverdlovsk-Shalya	136	DC
Krasnyy Liman - Svyatogorskaya	24	DC
Berdsk-Cherepanovo	70	DC
Smyshlyayevka-Zhigulevsk	86	DC
Malaya Vishera - Kalinin	354	DC
Pavlovsk-Vyritsa-Poselok	39	DC
Yaroslavl'-Danilov	75	DC
L'vov-Stryy	75	DC
Mukachevo-Chop	¹ 47	DC
Yerevan-Razdan	61	DC
Approaches to the Kama Hydroelectric		
Powerplant <u>a</u> /	21	DC
Total	2,297 <u>b</u> /	

a. Planned. It is not known whether these lines were commissioned.

b. Announced total. The sum of the listed lines is 2,285 km.

Table 7

Plan for Commissioning Electrified Railroad Lines in the USSR 1963

Railroad Line	Length (Kilometers)	Type of Current
Shakhun'ya-Kirov	216	AC
Novokuznetsk-Mezhdurechenskaya	64	AC
Likhaya-Rossosh'	277	AC
Artyshta-Altayskaya	200	AC
Cherepanovo-Barnaul	158	AC
Mironovka-Fastov	101	AC
Minsk-Olekhnovichi	48	AC
Nevinnomysskaya - Mineral'nyye Vody	107	AC
Svecha-Kotel'nich	47	AC
Ussuriysk-Nadezhdinskaya	81	AC
Maloyaroslavets-Sukhinichi	139	DC
Yasinovataya-Mariupol'	159	DC
Yasinovataya-Konstantinovka	55	DC
Akstafa-Kirovabad	95	DC
Khatsepetovka-Krinichnaya	50	DC
Shalya-Perm'	247	DC
Zhigulevsk-Syzran'	97	DC
Total	2,174 <u>a</u> /	

a. Announced total. The sum of the listed lines is 2,141 km.

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SOURCES FOR PROJECT 31.3750 Domestic Transportation in the USSR, 1962

This report is based mainly on unclassified Soviet publications and radio broadcasts but also on State Dept. foreign service despatches and on Air Force and Navy reports, none of which were classified higher than Secret. NOFORN material was not employed.

The principal unclassified sources were the following:

USSR, Central Statistical Administration. SSSF v tsifrakh v 1962 godu, kratkiy statisticheskiy sbornik, Moscow, 1963

USSR, Central Statistical Administration. Narodnoye khozyaystvo SSSR v 1901 godu, Moscow, 1962.

Razvitiye zheleznodorozimogo transporta v semilet**hi**, sbornik statey, Moscow 1960, p. 21, 27, 236-238.

1962 and darly 1903 issues of the following Soviet periodicals: (including JPRS transla-Zheleznodorozhnyy transport tions)

Elektricheskaya i teolovoznaya tyaga

Transportnoye stroitel'stvo

Avtomobil'nyye dorogi

Stroitel'stvo truboprowodov

Grazhdanskaya aviatsiya

Gudok

Pravda

√zvestiya

Vodnyy transport

Soviet Weekly

Moscow News

FRIS and BRC translations of Soviet radio broadcasts

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5 November 1963

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19 Attachments

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